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TITLE: Music aid for composing music, consists of a number of dice, each face bearing indicia relating to a musical aspect e.g. keynote, scale

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ABSTRACTED-PUB-NO: GB 2403060A

BASIC-ABSTRACT:

NOVELTY - The music aid consists of a number of dice (D4,D8,D12), each face bearing indicia relating to a musical aspect e.g. keynote, scale. A musical aspect can also be a style of music, or connected with song structure terms e.g. intro, verse, chorus.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method in generating random musical aspects.

USE - For composing music.

ADVANTAGE - Provides a simple means by which to prompt relatively random musical composition or at least stimulate creativity, especially during jamming sessions in which the composer or band members begin playing without a clear perception of how long the piece will last or what its structure will be.

DESCRIPTION OF DRAWING(S) - The figure shows the representations of the faces of a twelve-sided keynote die, a four-sided scale die, and an eight-sided chord die.

Dice D4,D8,D12 1, 2, 3/3

TITLE-TERMS: MUSIC AID COMPOSE MUSIC CONSIST NUMBER DICE FACE BEARING INDICIA  
RELATED MUSIC ASPECT SCALE

DERWENT-CLASS: P36 P86

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**CH 000521142 A**

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**FR 001203151 A**

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**Other: WPI, EPODOC, JAPIO**

(54) Abstract Title: **A music aid**

(57) A music aid comprised of a plurality of dice (D4, D3, D12), each face thereof bearing indicia relating to a musical aspect, e.g. a keynote (having twelve possible choices, i.e. C, C#/D $\flat$ , D, D#/E $\flat$ , E, F, F#/G $\flat$ , G, G#/A $\flat$ , A, A#/B $\flat$ , B) or a scale (e.g. major, ancient minor, pentatonic etc). A musical aspect can also be a style of music, or connected with song structure terms, e.g. intro, verse, chorus etc. The dice are used to inspire a composer when composing musical pieces. A preferred method of use is described.

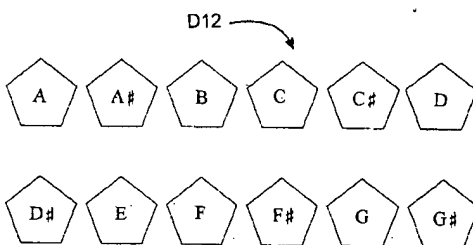


Fig. 1.

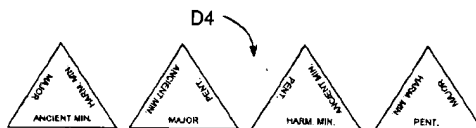


Fig. 2.

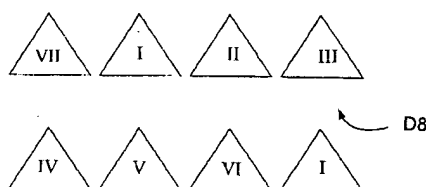


Fig. 3.

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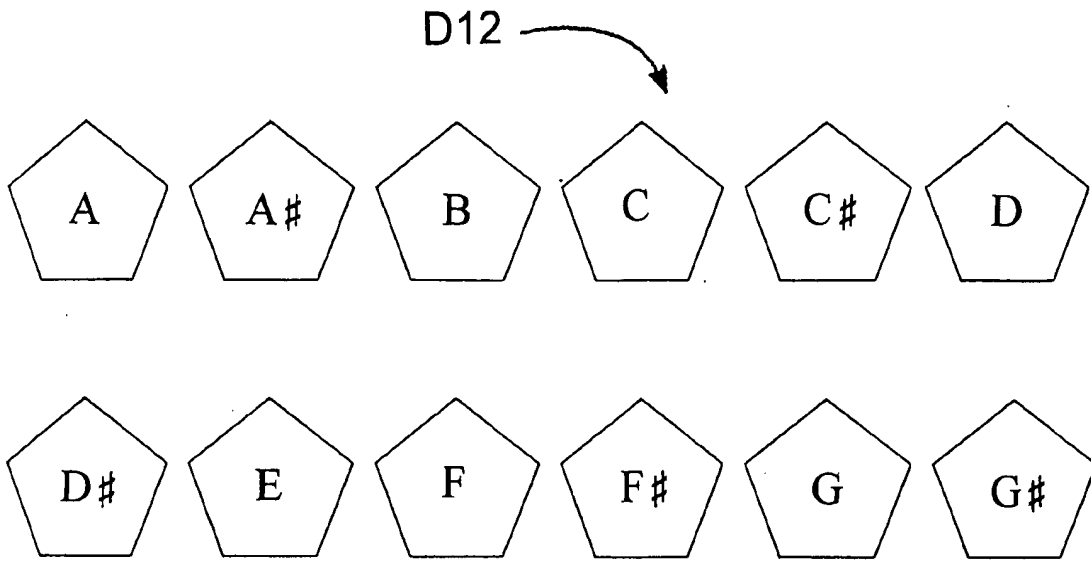


Fig. 1.

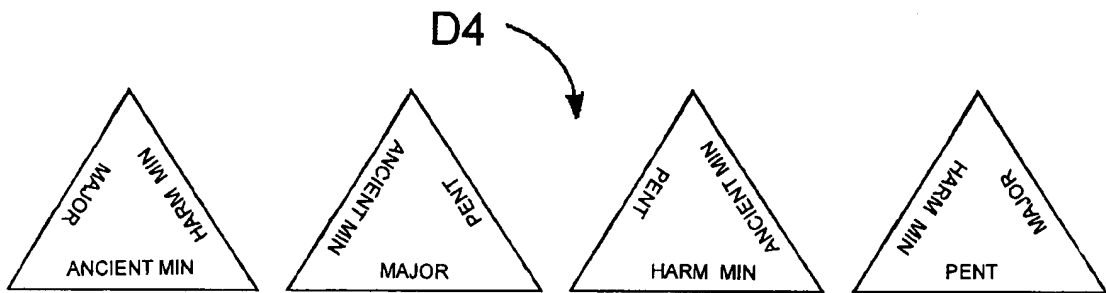


Fig. 2.

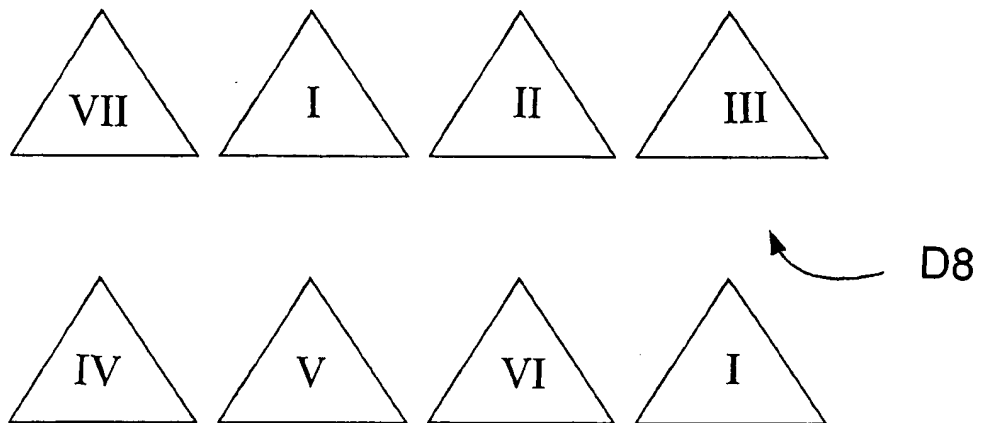


Fig. 3.

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### A Music Aid

The present invention relates to a music aid, particularly for use in the creative process of composing music.

The art of musical theory is well established and documented, however, the art of composing new musical pieces is much less defined because it is reliant on the creativity of the composer. As is sometimes observed, the consequences of composing music to familiar formulas tends to a lack of originality. Composers themselves may become frustrated that they naturally lean toward certain stylistic note, chord or scale structures, finding it difficult to break such habits.

It is therefore an object of the present invention to provide a simple means by which to prompt relatively "random" musical composition or at least stimulate creativity. A particular situation where this object is required to be met is "jamming", wherein the composer (or band members etc.) begin playing without a clear perception of how long the piece will last or what its structure will be.

In a first broad aspect of the present invention there is provided a music aid comprised of a plurality of dice, each face thereof bearing indicia relating to a musical aspect.

In a second broad aspect of the present invention there is provided a method of generating random musical aspects using a music aid according to the first broad aspect, wherein a

first die is rolled to determine a keynote, a second die is rolled to determine a scale type and a third die is rolled to determine a chord sequence.

In a third broad aspect of the invention there is provided a music aid including a random generating means, capable of displaying a plurality of indicia relating to a musical aspect.

In one form display from the random generating means will be sequential. In another form display from the random generating means will be simultaneous.

A "musical aspect" can be any definition wherein there are multiple choices according to musical theory. For example a musical aspect may be a keynote (having twelve possible choices, i.e. C, C#/D $\flat$ , D, D#/E $\flat$ , E, F, F#/G $\flat$ , G, G#/A $\flat$ , A, A#/B $\flat$ , B) or a scale (e.g. major, ancient minor, pentatonic etc). It can also be a style of music, or connected with song structure terms, e.g. intro, verse, chorus etc.

As is well known in the art (e.g. the art of board games) it is possible for dice to have many variations with regard to the number of faces, e.g. six-sided, eight-sided, twenty-sided. In the case of a die suitable for keynotes it would most preferably be "twelve-sided".

The present invention will now be described hereinafter with reference to the accompanying drawings in which:

Figure 1 is a representation of the faces of a twelve sided "keynote" die,

Figure 2 is a representation of the faces of a four-sided "scale" die, and

Figure 3 is a representation of the faces of an eight-sided "chord" die.

To best understand the usefulness of the present invention reference will be made to a preferred example, i.e. a set of three dice that represent keynotes, scales and chords.

Figures 1, 2 and 3 represent these three difference dice types, a twelve-sided die (D12), a four-sided die (D4) and an eight sided die (D8) respectively. A preferred method of use is as follows:

Step 1: Roll D12 to select a keynote. There are twelve different notes in the traditional western music sequence, each represented as a face of the D12: C, C#/D $\flat$ , D, D#/E $\flat$ , E, F, F#/G $\flat$ , G, G#/A $\flat$ , A, A#/B $\flat$ , B.

For the sake of this example, assume the roll resulted in displaying, on the upper-most face of the D12, the note F.

Step 2: Roll D4 to select a scale type. The possibilities illustrated by Figure 2 are, "ancient minor", "major", "harmonic minor" and "pentatonic". Other embodiments may feature alternative scale types on a four-sided die or a die with more faces (e.g six-sided, ten-sided etc.)

D4 is interpreted by reading the indicia adjacent the "ground" surface upon which it is rolled, e.g. in

Figure 2 the left-most face would be read "ancient minor", the rightmost read "pentatonic" etc.

For the sake of this example, assume the roll resulted in displaying the second from the right face of Figure 2, i.e. "harmonic minor".

Step 3: The keynote (root) and scale together give the key, F harmonic minor in this example.

Step 4: Roll D8 to create a chord sequence. The resultant number (represented by Roman numerals in Figure 3) gives the number of chords in the piece. For the sake of this example assume this first roll was a "III", meaning there are to be 3 chords in the piece.

Step 5 Roll D8 again as many times as the resultant number from Step 4 (e.g. 3). These next numbers give a chord sequence based on the key from Step 3.

For the sake of the example, assume the next 3 rolls were VI, III, I. Therefore, the chord sequence is the 6<sup>th</sup>, 3<sup>rd</sup> and 1<sup>st</sup> chords of F harmonic minor: C#m, G#6, Fm.

If the first chord has not come up in the rolls then add the first chord (I) to the sequence automatically as this is the root chord and foundation of the key.

Step 6 The "randomly generated" chord sequence is now ready to be played. It will be usual to test the

sequence by playing it a few times to see how it sounds and whether the player is inspired. In a band situation the rhythm guitar or keyboard player may begin, to be joined by a suitable drum pattern and lead guitar (playing F harmonic minor scale) etc.

The chord sequence generated by the dice is a starting point for inspiration. Therefore, it is quite possible that said sequence does not feel right and hence should be discarded. It is then a simple case of repeating Steps 1 to 6.

An alternative to Steps 4 and 5 is to keep rolling D8, noting the results, until the first chord (I) comes up. This could produce long chord sequence e.g IV, VI, III, V, II, II, VI, IV, VIII, V, I.

It is then up to the inspired composer/players to use this collection. For example, the doubled chords may be ignored and/or the order rearranged. Or, it may in fact become a challenge to use the pure chord sequence exactly as generated.

Further embodiments may take into account a "probability weighting" such that there is a greater likelihood of generating more well known musical structures. For example, even though part of the purpose of the present invention is to "shake up" old patterns of composition, it has to be admitted that some standard patterns, such as a "three chord trick" in rock music, simply sound good. One way of achieving such a result would be to increase the number of sides on the chord sequence die (Figure 3) and put more of the most commonly used chords on the additional faces.



A 12 sided chord die (as opposed to the D8 of Figure 3) could have the following sides: I, II, III, IV, V, VI, VII, I, IV, V, III, I, thereby making I, IV, V and III more likely to be the result.

A 20 sided chord die could additionally have: IV, V, III, I, IV, V, II, VII, further weighting the probability in favour of these chords.

The same principal can be used for other dice according to the present invention. Also, by way of example, a different chord die (e.g. 16-sided) could be used to be specific to the key already selected (Step 2). In this way the probability weighting for notes in a major key may be different to a minor key.

It will be clear from the foregoing that it is preferable for the composer/players to have some basic knowledge of musical theory in order to understand and benefit from the random generation means provided by the dice. However, with appropriate accompanying materials, even a beginner can use such a system. For example, a beginner guitar player can be provided with tables to outline all notes of a selection of scales and chord charts that show correct finger placement on a fret board, as is known in the art. A music aid according to the present invention then becomes a learning tool that helps a player to familiarise with unusual chord structures.

The attached appendix is an example of basic musical theory that may be provided to supplement the invention.

Further embodiments of the present invention may have implications for generating drum patterns or even influence the style of music (e.g. a four sided die displaying "heavy metal", "country and western", "abominable europop cheese" and "neo-classical jazz fusion").

An extension of this embodiment is a set of "composer dice" that can be used in combination or singularly to create frameworks, overcome blockages, set challenges or just provide a starting point. A "song structure die" would be used to choose elements of a composition, e.g.: intro, bridge, refrain, instrumental break. The structure of a song may be better determined using "probability weighted" dice as described above. Also, the "intro" would obviously be automatically promoted to the beginning of the arrangement.

It is possible to use the first embodiments (as outlined in Figures 1 to 3) to determine an overall key, scale and group of chords or, in conjunction with further embodiments ("song structure die") to choose chords and even keys for each section of a song or tune.

An "arrangement die" can be used to choose how an instrument or group of instruments will approach the chord sequence, so the strings could be given a counter melody while the horns hold the chords as a pad or the bass works through the notes of the chord in an arpeggio while the clarinet repeats a one bar riff.

An example (but not limited thereto) of the face markings for such dice is as follows:

SONG STRUCTURE: verse, middle eight, chorus, bridge, intro, refrain, instrumental break

ARRANGEMENT: stabs, pad, arpeggio, harmony, counter melody, riff, pedal, fills, licks

CHANGE: acapella, drop one instrument out, percussion only, key change, slow down

CHORD ENHANCER: 7<sup>th</sup>, diminished, augmented, inverted, 4<sup>th</sup>, 6<sup>th</sup>

MODAL (for composition, practice, advanced soloing): dorian, mixolydian, Lydian, aolian, frigian, locrian, ionian

RHTHYM (time signatures): 2/4, 3/4, 4/4, 5/4, 6/8, 7/8, 9/8 etc

It is possible to provide "standard" numbered dice with a set of corresponding rules/tables, however, it is preferable to provide dice with indicia specialised for use with the present invention, to simplify use as much as possible. The only additional tools (aside from some musical knowledge) may be a pen and paper to record the structures generated by the apparatus.

The general concept of "random generation" can be adapted to use with a basic computer software program, possibly even featuring graphical representations of dice. Alternatively, a series of dials with musical aspects about the peripheral

edge and each bearing a spinning pointer could be used. The basic form of each of these alternatives is known in the art, however, the application for a musical creative process is unique.

A further embodiment has a "slot machine" type appearance as used in a casino. For example, by pulling a lever a series of dials can spin and randomly generate a sequence of musical aspects indicated on the edges of the dials. A notable difference in construction is that a normal slot machine would have three dials, each with the same number of segments displaying indicia (when the same segments match then this denotes a jackpot of some type). In the present invention it is probable that the number of segments/indicia will differ in the same way as the dice embodiment. There is also no jackpot expected. Such a machine could be mechanical or electronic (e.g. incorporated into a guitar tuner).

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**Absolute beginners.**

The second thing that you will need to learn is where the notes are on your instrument. Memorising note after note is no fun when you just want to get on and play, so roll the twelve sided dice to pick a note, then the four side dice to pick a scale. Now you only have to find eight notes (there are only seven notes in a scale plus the octave) and you can start to play. When you have got the hang of that then roll Jam Dice (a suggested Trade Mark for a form of the present invention) again and learn a new scale and eight more notes

## Basic background stuff

There are twelve different notes in the traditional western music sequence:

C, C#/Db, D, D#/Eb, E, F, F#/Gb, G, G#/Ab, A, A#/Bb, and B.

After B comes C, an octave higher than the first C, and the cycle repeats. You could picture it as a helix or spring. You could also picture it as a small furry animal - but this wouldn't get you very far.

This sequence is called the chromatic scale or the Twelve Tone Scale. Each step in this scale is separated by a semitone - the smallest musical distance or interval. (We'll talk more about intervals later. First we need to get some of the meaty stuff under our belts) Not all of these notes sound good together, in fact one arrangement of notes is so unpleasant that it was considered 'diabolic' in the middle ages and playing it could get you burnt for heresy. These days the same arrangement can get you a pretty decent review in NME. Not even Jam Dice can save you from the whims of the music critics.

It is standard musical practice, before beginning to play or compose, to decide to use only a selection of notes that *do* work well together. These pre-determined selections of notes are called Scales.

## Scales

Scales are usually made up of seven notes; each separated from its neighbour by a semitone (half step) or a tone (whole step). These interval variations create a pattern with a beginning and end, known as the keynote. The following is a description of the different types of scales.

## The Major Scale

The best known scale is the one most people know as the Major Scale. It has that do-re-mi sound we all know so well!

The scale can start on any note. Let's roll the twelvesided die and choose one. Let's say you roll G. So G is our keynote. The pattern of intervals for the major scale is:

*tone, tone, semitone, tone, tone, tone, semitone*

So to make a major scale from G we take G as the first note of the scale. To get the second note of the scale we go up the twelve tone scale one whole tone (two semitones) from G, which takes us to A. To get the third note go up one tone from A to B. B is the third note. Now go on a semitone and C is the fourth note. Now a tone-D, a tone -E, another tone-F# and finish with a semitone-G.

K—T—T—S—T—T—T—S(etc.)—T—  
 1      2      3 4      5      6      7      8/1      2  
 G, G#, A, A#, B, C, C#, D, D#, E, F, F#, G, G#, A, A#...

### Ancient minor

As its name suggests, this scale has been around for a while but such is the power of music that anything you play on it will sound as vibrant and new as if the notes had just been created for the first time, there and then, under your fingers (as indeed they have!)

**For the ancient minor the pattern goes:**

*Tone, semitone, tone, tone, semitone, tone, tone.*

**This example has A as its root:**

K—T—S—T—T—S—T—T(etc.)T—S ..  
 1    2 3    4    5 6    7    8/1   2 3...  
 A, Bb, B, C, Db, D, Eb, E, F, Gb, G, Ab, A, Bb, B, C...

## Harmonic minor

**A minor scale with a twist in its tale. The pattern goes:**

*Tone, semitone, tone, tone, semitone, then a three semitone gap, and one semitone to bring us home*

**Example in C sharp:**

K—T—S—T—T—S—3S—S-(etc.)T—S...  
 1 2 3 4 5 6 7 8/1 2 3...  
 C#, D, D#, E, F, F#, G, G#, A, A#, B, C, C#, D, D#, E...

## Pentatonic

A pentatonic scale has only five notes, separated by intervals of whole tones and minor thirds (three semitone gaps). The pattern for the major pentatonic scale is:

*Tone, tone, 3 semitones, tone, 3 semitones*

Example in D:

R—T—T—3xS—T—3xS(etc.)T..  
 1 2 3 4 5 6/1 2 ...  
 D, D#, E, F, F#, G, G#, A, A#, B, C, C#, D, D#, E, F...

## Intervals

The distance between any two notes is called an interval. Here are the common names for the intervals within an octave of the twelve tone scale with examples using C as a handy starting point

|                |            | No. of Semitones: |
|----------------|------------|-------------------|
| Unison:        | C C        | 0                 |
| Minor 2nd      | C - C#     | 1                 |
| Major 2nd      | C -- D     | 2                 |
| Minor 3rd      | C --- D#   | 3                 |
| Major 3rd      | C ---- E   | 4                 |
| Perfect 4th    | C ----- F  | 5                 |
| Augmented 4th  | C ----- F# | 6                 |
| Diminished 5th | C ----- Gb | 6                 |
| Perfect 5th    | C ----- G  | 7                 |
| Minor 6th      | C ----- G# | 8                 |
| Major 6th      | C ----- A  | 9                 |
| Minor 7th      | C ----- A# | 10                |
| Major 7th      | C ----- B  | 11                |
| Perfect 8ve    | C ----- C  | 12                |

(Yes, you're right: the augmented 4th and diminished 5th are the same note)

## Numerals

Once in a scale a note will often be referred to by its interval from the keynote: 2nd, 3rd, 4th, 5th, 6th, 7th and octave. The chords built using each of these notes as a root note are traditionally labelled with Roman numerals. The chord of the keynote is I, the rest follow: II, III, IV, V, VI, VII.

## Chords

Chords are made by playing two or more notes at the same time. The notes in a chord should be notes that are in the key you are playing in or they will clash. The most common chords are made using the root, the relevant third up from that and the fifth up from the root of the chord. Here is an example of a keynote chord and the second (II) chord in the key of A Major.

|           |   |      |     |       |     |       |     |   |
|-----------|---|------|-----|-------|-----|-------|-----|---|
| Pattern   | K | T    | T   | S     | T   | T     | T   | S |
| Intervals | 1 | 2nd  | 3rd | 4th   | 5th | 6th   | 7th |   |
| Scale     | A | B    | C#  | D     | E   | F#    | G#  | A |
|           |   | Root |     | third |     | fifth |     |   |
| Chord I   | A |      | C#  |       | E   |       |     |   |
|           |   | Root |     | third |     | fifth |     |   |
| Chord II  |   | B    |     | D     |     | F#    |     |   |

**WHAT I CLAIM IS:**

1. A music aid comprised of a plurality of dice, each face thereof bearing indicia relating to a musical aspect.
2. The music aid of claim 1 wherein the musical aspect(s) is directly applied to a face of the dice.
3. The music aid of claim 1 wherein a tabulated (e.g. numbered) list of musical aspects is provided, the indicia on each dice face corresponding to a musical aspect in the list.
4. The music aid of any one of the preceding claims wherein the plurality of dice include a set of dice selected from one or more of 4-sided, 8-sided, 10-sided, 12-sided, 16-sided, 20-sided dice.
5. The music aid of any one of the preceding claims wherein each die relates to a different musical aspect, e.g. (but not limited to) keynote, scale, chord, style, structure, arrangement, modal and/or rhythm.
6. The music aid of any one of the preceding claims wherein a die includes more than one indicia of the same type, to reflect a probability weighting in favour of that type.
7. A method of generating random musical aspects using a music aid according to any one of the preceding

claims, wherein a first die is rolled to determine a keynote, a second die is rolled to determine a scale type and a third die is rolled to determine a chord sequence.

8. A music aid including a random generating means, capable of displaying a plurality of indicia relating to a musical aspect.
9. The music aid of claim 8 wherein the random generating means has a "slot machine" type appearance.
10. The music aid of claim 8 or 9 wherein the random generating means will be sequential.
11. The music aid of claim 8 or 9 wherein the random generating means will be simultaneous.
12. A music aid substantially as herein described with reference to the accompanying drawings.
13. A method of generating random musical aspects substantially as herein described with reference to the accompanying drawings.





INVESTOR IN PEOPLE

Application No: GB0410854.4

114

Examiner: Rosalind Lyon

Claims searched: All

Date of search: 13 October 2004

## Patents Act 1977: Search Report under Section 17

### Documents considered to be relevant:

| Category | Relevant to claims | Identity of document and passage or figure of particular relevance              |
|----------|--------------------|---|
| X        | 1, 2 and 8         | FR 1203151 A<br>(MARQUER) See especially figures and page 2 paras 4-8 inclusive |
| X        | 1, 2 and 8         | US 3994500 A<br>(SCHOW) See especially abstract and figures                     |
| A        | -                  | FR 1368701 A<br>(ATZAMBA) See especially figures                                |
| A        | -                  | CH 521142 A<br>(FACKLER & LIENHARD) See especially figures                      |

### Categories:

|   |  |   |  |
|---|--|---|--|
| X | Document indicating lack of novelty or inventive step  | A | Document indicating technological background and/or state of the art   |
| Y | Document indicating lack of inventive step if combined with one or more other documents of same category | P | Document published on or after the declared priority date but before the filing date of this invention           |
| & | Member of the same patent family   | E | Patent document published on or after, but with priority date earlier than, the filing date of this application. |

### Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>W</sup>:

G5X

Worldwide search of patent documents classified in the following areas of the IPC<sup>07</sup>

A63F; G10G

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC, JAPIO